# ABSTRAK

**PERANCANGAN GEOMETRIK JALAN RIGID PAVEMENT JALAN TOL KAYU AGUNG – PALEMBANG – BETUNG STA 55+300 – STA 60+300**

## Perancangan geometrik jalan merupakan salah satu aspek krusial dalam pembangunan infrastruktur transportasi, khususnya jalan tol. Jalan Tol Kayu Agung – Palembang – Betung memiliki peran strategis dalam meningkatkan konektivitas dan efisiensi distribusi barang serta mobilitas masyarakat di Provinsi Sumatera Selatan. Pada ruas STA 55+300 hingga STA 60+300, dilakukan perancangan geometrik jalan rigid pavement untuk memastikan jalan yang dibangun memenuhi standar keamanan, kenyamanan, dan efisiensi sesuai ketentuan yang berlaku. Proses perancangan ini melibatkan beberapa tahapan penting, yaitu pengumpulan dan analisis data topografi, data lalu lintas, dan data tanah, yang kemudian digunakan sebagai dasar dalam penyusunan desain geometrik jalan. Perancangan meliputi penentuan trase jalan, alinyemen horizontal dan vertikal, pelebaran jalan pada tikungan, perhitungan jari-jari tikungan, superelevasi, serta perencanaan kelandaian maksimum dan minimum. Selain itu, dilakukan pula perhitungan tebal perkerasan rigid pavement dengan mempertimbangkan karakteristik lalu lintas, daya dukung tanah, dan umur rencana perkerasan. Tidak hanya itu, dalam perancangan ini juga disusun rencana anggaran biaya (RAB) dan jadwal pelaksanaan proyek yang mencakup perhitungan volume pekerjaan, pemilihan alat berat, analisis harga satuan pekerjaan, serta penyusunan time schedule menggunakan metode network planning. Perencanaan ini bertujuan untuk memastikan pelaksanaan proyek berjalan tepat waktu, tepat biaya, dan tepat mutu.

**Kata kunci:** Perancangan Geometrik, Jalan Tol, *Rigid Pavement*, Jalan Kayu Agung – Palembang – Betung, Sumatera Selatan

***ABSTRACT***

# GEOMETRIC DESIGN OF RIGID PAVEMENT FOR THE KAYU AGUNG – PALEMBANG – BETUNG TOLL ROAD, STATIONS 55+300 TO 60+300

Geometric road design is one of the crucial aspects in the development of transportation infrastructure, particularly toll roads. The Kayu Agung – Palembang – Betung Toll Road plays a strategic role in improving connectivity and enhancing the efficiency of goods distribution and community mobility in South Sumatra Province. This study focuses on the geometric design of rigid pavement along the road section from STA 55+300 to STA 60+300 to ensure that the road meets the standards of safety, comfort, and efficiency in accordance with applicable regulations. The design process involves several essential stages, including the collection and analysis of topographic data, traffic data, and soil data, which serve as the foundation for developing the geometric road design. The design covers route alignment determination, horizontal and vertical alignment design, road widening at curves, curve radius calculation, superelevation, and the planning of maximum and minimum slopes. Additionally, the rigid pavement thickness is calculated by considering traffic characteristics, soil bearing capacity, and the planned pavement service life. Moreover, the project also includes the preparation of the project budget plan (RAB) and project implementation schedule, covering volume calculations, heavy equipment selection, unit price analysis, and time schedule planning using network planning methods. This planning aims to ensure that the project is completed on time, within budget, and with high quality.

**Keywords:** Geometric Design, Toll Road, Rigid Pavement, Kayu Agung – Palembang – Betung Road, South Sumatra